

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/003406

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-39 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-22 received by this Authority on 10.10.2005 with telefax
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/7-7/7 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 1-21
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/003406

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-22</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1-22</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1-22</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
	<p>1.</p> <p>Reference is made to the following documents:</p> <p>D1: Z.Y. CHANG AND W.M.C. SANSEN: "Low-noise wide-band amplifiers in bipolar and CMOS technologies" 1991, KLUWER ACADEMIC PUBLISHERS, XP008036864</p> <p>D2: US-A-4 034 222 (BOUX RENE ET AL) 5 July 1977 (1977-07-05)</p> <p>2.</p> <p>2.1</p> <p>D1, which is considered to be the prior art closest to the subject matter of independent claim 1, describes (see page 154, figure 1):</p> <p style="padding-left: 40px;">a radiation exposure measurement device including at least one element for detecting photons or particles, associated with at least one circuit for acquiring and counting detection events, such that the acquisition circuit comprises a signal processing circuit generating counting pulses corresponding to the detection events, <u>and means for continuously resetting.</u></p> <p>Consequently, the subject matter of claim 1 differs from</p>		

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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this known device in that:

the acquisition circuit further comprises means for discontinuously resetting the pulse signal processing circuit.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem that the present invention is intended to solve can be considered to be that of:

decorrelating the process of converting incident charges into voltage from the process of rapidly resetting the output levels of the amplifier stages in the acquisition chain of the radiation detection device.

D2 describes (the references between parentheses apply to said document):

a radiation exposure measurement device (figure 1: A) including at least one element for detecting photons or particles (KA), associated with at least one circuit for acquiring and counting detection events (RA1 - AA), such that the acquisition circuit comprises a signal processing circuit generating counting pulses (QA) corresponding to the detection events, and means for discontinuously resetting (IA) the pulse signal processing circuit.

The solution to this problem, as proposed in claim 1 of the present application, is considered to involve an

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inventive step (PCT Article 33(3)) for the following reason:

Even though D2 describes means for discontinuously resetting the pulse signal processing circuit, it gives a person skilled in the art no indication with regard to the possibility of converting the incident charges, let alone separating the conversion process from the rapid reset process. For this reason, a person skilled in the art aware of the content of D1, would not envisage including the features described in D2.

2.2

Claims 2 to 22 are dependent on claim 1 and thus also comply, as such, with the PCT requirements of novelty and inventive step.